MAX-PLANCK-INSTITUT FÜR PHYSIKALISCHE CHEMIE

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Unser Zeichen:
Bitte im Schriftverkehr angeben

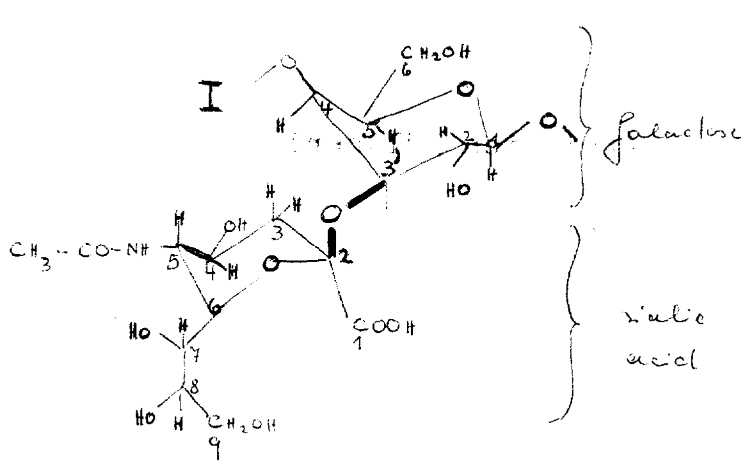
Dear Dr. Nirenberg,

with seperate mail I will send you next week new preparations of the commercially available Vibrio cholerae-sialidase and different testsubstances.

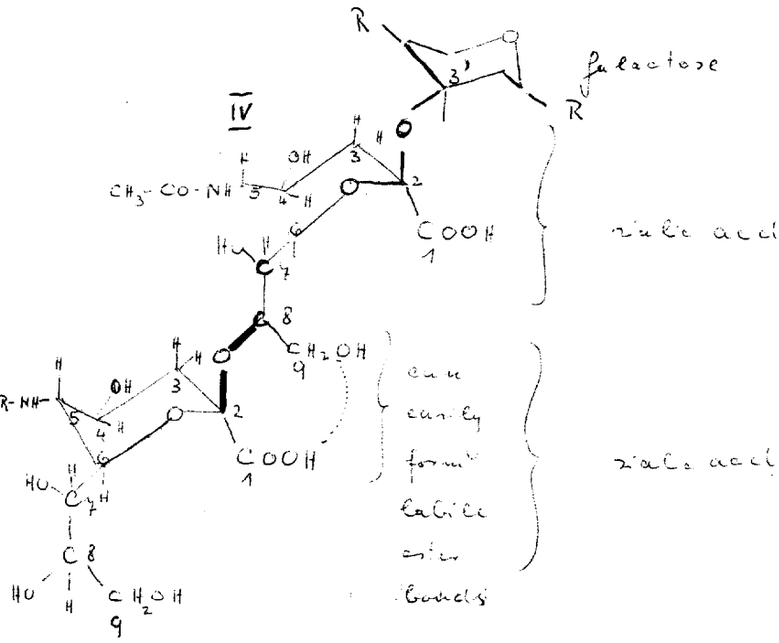
At the moment we have two pure sialidases, the one I have already mentioned which hydrolizes both 2 - 6' and 2 - 3' linkages of sialic acid to carbonydrates.And another one from influenza A2 virus which readily splits only 2 - 3' linkages.This is the characteristic feature of myxovirus sialidases.

In all (7) isolated acidic oligosaccharides we find 4 types of bonds through which the sialic acid residues are linked to the carbohydrate:

Type I	2 - 3	linkage	to	galactose
II	2 - 6	"	"	"
III	2 - 6	"	"	hexosamine
IV	2- 8	"	from sialic acid to sialic acid	



similar in II and III



Type I in gangliosides, fetuin (JbC 239 567 1964) and acidic α_2-glycoproteins from human s m (BBA 49 250 1961).

Type II

Type III in submaxillaris mucin (BBA 38 513 1960)

Type IV in ganglioside III and IV and colominic acid (polymeric sialic acid)(Biochem. 3 247 1964).

As you can see the sialidase we will send splits all these bonds. Only type IV makes some difficulties because in addition to the 2 - 8 linkage a 1 - 9 labile ester linkage can easily be formed and prevent the enzyme to split the 2 - 8 linkage. In these cases one has to open the labile ester linkage first with n/100 NaOH (few minutes). There are of course other difficulties we are just looking for and I shall tell you later. I came back for some weeks to prepare larger amounts of our ATPase which is active on bilayer. I think I will return in spring and hope to see you then and give a talk.
Thank you very much again for this valuable introduction to the nerve growth factor.

Sincerly yours

(Heinrich Müldner)

Manfred Eigen sends his regards.